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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,020	07/07/2006	Iakovos Sigalas	19366	1036
23389 7590 12/29/2009 SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA SUITE 300 GARDEN CITY, NY 11530				
EXAMINER				
FERGUSON, LAWRENCE D				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
12/29/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,020

Applicant(s)

SIGALAS ET AL.

Examiner

Lawrence D. Ferguson

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,10,12,13 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,10,12,13 and 22-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment filed September 23, 2009. Claims 1-2, 4-8, 10 and 12 were amended, claims 3, 9, 11, 19-21 were cancelled and claims 22-30 were added, rendering claims and 1-2, 4-8, 10, 12-13 and 22-30 pending.

New Matter - 35 U.S.C. 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-2, 4-8, 10, 12-13 and 22-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1, the phrase, 'first and second sets of particles are contiguous throughout the composite material' is not supported by the specification. Additionally, in claim 22, the phrases, 'grains fused together throughout the composite material' and 'grains are fused together throughout the composite material' are not supported by the specification.

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The Examiner was not able to find support for the added limitation discussed above at the cited portions of the specification or Figures.

Claim Rejections – 35 USC § 102(b)

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4, 6-7, 10 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Fang et al. (U.S. 6,454,027).

Fang discloses a composite material comprising a plurality of granules (cores) formed from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN) distributed within a matrix (column 2, line 66 through column 3, line 12, 21; column 4, lines 42-43) where the PCD and PcBN materials are ultra-hard materials. Because the granules are made from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN), each granule comprises first and second particles that are contiguous throughout the composite material. Additionally, Figure 1 shows some of the granules (12) are contiguous with adjacent granules at grain interfaces (16) (column 5, lines 8-13), as in claims 1-2 and 12-13.

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Concerning claims 4-5 and 10, the cores are formed of PCD and PcBN and the matrix is construed as being formed of PCD and PcBN material, as the matrix comprises PCD and PcBN material. Because PCD and PcBN are two different materials, it is inherent for one of the set of particles to have a finer particle size and different composition than the other set of particles.

Concerning claims 6-7, the PCD granules have grain size in the range of from 1 to 50 microns (column 5, lines 40-43).

Claim Rejections – 35 USC § 103(a)

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al. (U.S. 6,454,027).

Fang is taken as above. Fang does not explicitly disclose the PCD and PcBN materials differ in particle size. It would have been obvious to one of ordinary skill in the art for the PCD and PcBN materials to differ in particle size because Fang discloses a composite material comprising a plurality of granules (cores) formed from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN) (column 2, line 66 through column 3, line 12, 21) where Figure 1 shows the grain size (12) of the mixed material vary

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in size. The reference further discloses diamond particles can be granulated into a desired size (column 6, lines 33-34). Regarding the differing particle size of the materials, a recitation of a newly disclosed property does not distinguish over a reference disclosure of the article or composition claims. *General Electric v. Jewe Incandescent Lamp Co.*, 67 USPQ 155. *Titanium Metal Corp. v. Banner*, 227 USPQ 773.

Response to Arguments

8. Applicant's arguments of the rejection made under 35 U.S.C. 102(b) as being anticipated by Fang et al. (U.S. 6,454,027) have been considered but are unpersuasive. Applicant argues Fang does not disclose first and second sets of particles are contiguous throughout the composite material. Fang discloses a composite material comprising a plurality of granules (cores) formed from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN) distributed within a matrix (column 2, line 66 through column 3, line 12, 21; column 4, lines 42-43) where the PCD and PcBN materials are ultra-hard materials. Because the granules are made from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN), each granule comprises first and second particles that are contiguous throughout the composite material. Additionally, Figure 1 shows some of the granules (12) are contiguous with adjacent granules at grain interfaces (16) (column 5, lines 8-13).

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Applicant's arguments of the rejection made under 35 U.S.C. 103(a) as being unpatentable over Fang et al. (U.S. 6,454,027) have been considered but are unpersuasive. Applicant argues because Fang is not anticipatory or obvious over instant claim 1, claim 8 is patentable. Because Fang has been maintained over claim 1, Fang remains obvious over claim 8 for reasons of record. Applicant argues column 8, lines 14-25 of Fang teaches away from the claimed invention. Examiner maintains because the granules are made from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN), each granule comprises first and second particles that are contiguous throughout the composite material.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample, can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lawrence Ferguson/
Patent Examiner, Art Unit 1794

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794